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#43 Search (HCV or "hepatitis C") AND (E2-661 or E2661 or (E2 AND truncat* and 661) Limits: Publication Date to 1999/11/24	11:37:14	2
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WEST Search History

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Hide?	Set Name	Query	Hit Count
	<i>DB=PGPB,USPT,EPAB,JPAB,DWPI; PLUR=YES; OP=OR</i>		
<input type="checkbox"/>	L13	L12 and L11	2
<input type="checkbox"/>	L12	L10 and (HBV or HCV) same (fusion or chimer*)	39
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<input type="checkbox"/>	L9	(HCV or hepatitis adj C) with (envelope adj protein adj 2 or E2) and E2 with 384 and (E2 with 661 or E2-661 or E2 adj 661)	37
<input type="checkbox"/>	L8	(HCV or hepatitis adj C) same E2 and E2 same (truncat\$ same (384-661 or 384 adj3 661) or E2661 or E2-661 or truncat\$ with 661)	9
<input type="checkbox"/>	L7	(fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine near10 aspartic or Ile near10 ASP or I-D ILE adj ASP)	45
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<input type="checkbox"/>	L4	(fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine adj3 aspartic or I-D)	0
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<input type="checkbox"/>	L2	(fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine adj3 aspartic or I-D or ID)	6051
<input type="checkbox"/>	L1	(fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) with (isoleucine adj3 aspartic or I-D or ID)	7809

END OF SEARCH HISTORY

BLASTP 2.2.16 [Mar-25-2007]

Reference:

Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer,
Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman
(1997), "Gapped BLAST and PSI-BLAST: a new generation of
protein database search programs", Nucleic Acids Res. 25:3389-3402.

RID: 1177943386-3285-93679057902.BLASTQ2

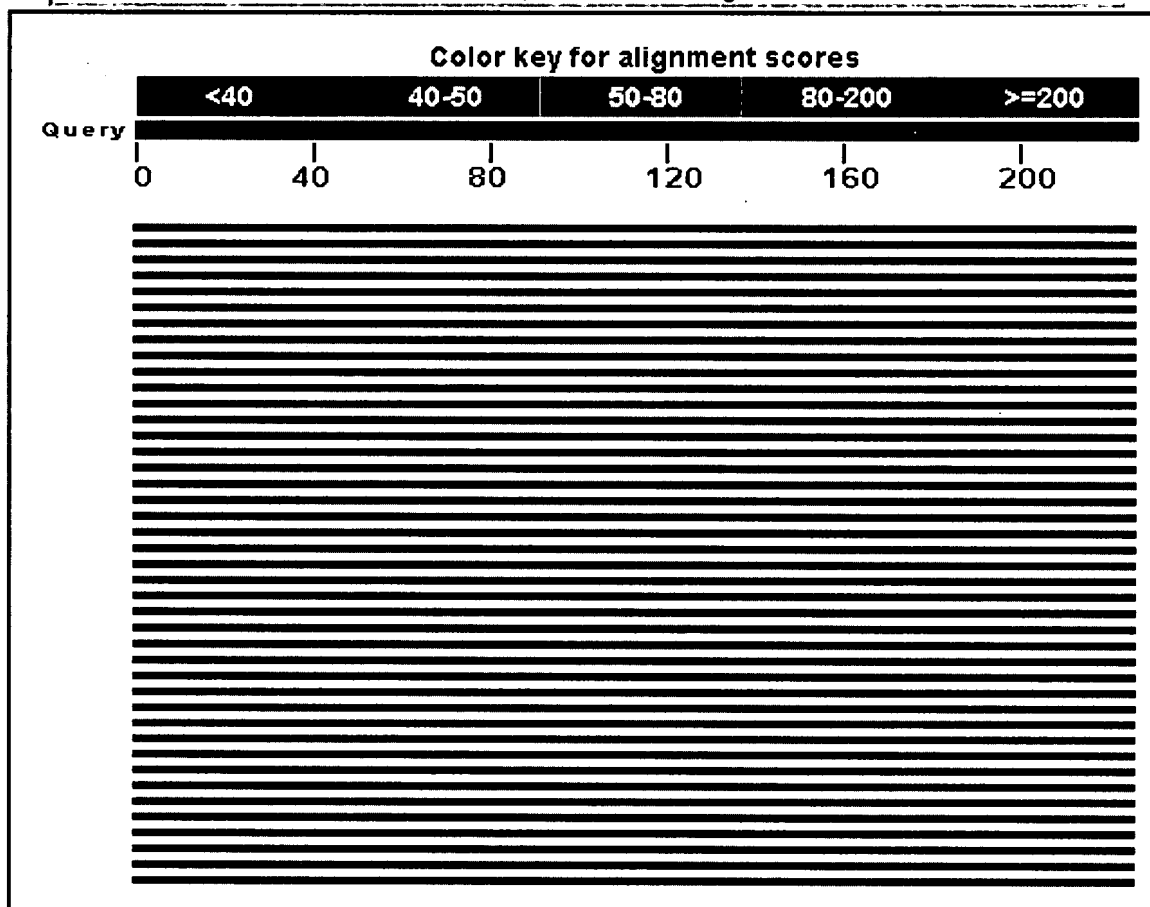
Database: All non-redundant GenBank CDS
translations+PDB+SwissProt+PIR+PRF excluding environmental samples
from WGS projects
4,887,113 sequences; 1,688,179,597 total letters

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Query=
Length=226

Distribution of 100 Blast Hits on the Query Sequence

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Distance tree of results NEW

Sequences producing significant alignments:	Score (Bits)	E Value
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gi 82491850 gb ABB77805.1 HBsAg [Hepatitis B virus]	401	1e-110
gi 62006070 dbj BAD91280.1 LHBS [Hepatitis B virus]	401	1e-110
gi 38000026 gb AAR07096.1 large S protein [Hepatitis B virus]	401	1e-110
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gi 32330520 gb AAP79759.1 S protein [Hepatitis B virus]	401	1e-110
gi 32330516 gb AAP79755.1 large S protein [Hepatitis B virus]	401	1e-110
gi 32330521 gb AAP79760.1 middle S protein [Hepatitis B virus]	401	1e-110
gi 14285169 gb AAK58874.1 PreS1+PreS2+HBsAg [synthetic const...	401	1e-110
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gi 527444 emb CAA84792.1 surface protein S [Hepatitis B virus]	401	1e-110
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gi 62999570 gb AAY25224.1 	middle S protein [Hepatitis B virus]	396	4e-109
gi 62999611 gb AAY25260.1 	S protein [Hepatitis B virus]	396	4e-109
gi 62999610 gb AAY25259.1 	middle S protein [Hepatitis B virus]	396	4e-109
gi 62999571 gb AAY25225.1 	S protein [Hepatitis B virus]	396	4e-109
gi 62999609 gb AAY25258.1 	large S protein [Hepatitis B virus]	396	4e-109
gi 62999569 gb AAY25223.1 	large S protein [Hepatitis B virus]	396	4e-109
gi 56417948 gb AAV90852.1 	HBsAg protein [Hepatitis B virus]	396	4e-109
gi 56417927 gb AAV90842.1 	HBsAg protein [Hepatitis B virus]	396	4e-109
gi 41529347 dbj BAD08464.1 	small S protein [Hepatitis B virus]	396	4e-109
gi 32330552 gb AAP79787.1 	S protein [Hepatitis B virus] >gi ...	396	4e-109
gi 15211893 emb CAC51282.1 	small surface antigen [Hepatitis B v	396	4e-109
gi 15211898 emb CAC51287.1 	large surface antigen [Hepatitis B v	396	4e-109
gi 15211899 emb CAC51288.1 	middle surface antigen [Hepatitis B	396	4e-109
gi 90901697 gb ABE01784.1 	S protein [Hepatitis B virus]	396	5e-109
gi 90901588 gb ABE01730.1 	S protein [Hepatitis B virus]	396	5e-109
gi 32330536 gb AAP79773.1 	S protein [Hepatitis B virus]	396	5e-109
gi 32330560 gb AAP79794.1 	S protein [Hepatitis B virus]	396	5e-109
gi 32330561 gb AAP79795.1 	middle S protein [Hepatitis B virus]	396	5e-109
gi 32330532 gb AAP79769.1 	large S protein [Hepatitis B virus]	396	5e-109
gi 32330537 gb AAP79774.1 	middle S protein [Hepatitis B virus]	396	5e-109
gi 32330556 gb AAP79790.1 	large S protein [Hepatitis B virus]	396	5e-109
gi 4884896 gb AAD31862.1 AF134145_1	surface antigen [Hepatitis B	396	5e-109
gi 58189944 gb AAW65553.1 	HBsAg [Hepatitis B virus]	396	5e-109
gi 5114068 gb AAD40203.1 AF090838_4	PreS1+PreS2+HBsAg [Hepatitis	396	5e-109
gi 3248985 gb AAC62950.1 	small surface antigen [Hepatitis B vir	396	5e-109
gi 2289176 gb AAC58007.1 	middle S protein [Hepatitis B virus]	396	5e-109
gi 83272677 gb ABC00816.1 	small surface envelope protein [Hepat	396	5e-109
gi 62999531 gb AAY25190.1 	S protein [Hepatitis B virus]	396	5e-109
gi 62999594 gb AAY25245.1 	middle S protein [Hepatitis B virus]	396	5e-109
gi 62999595 gb AAY25246.1 	S protein [Hepatitis B virus]	396	5e-109
gi 62999530 gb AAY25189.1 	large S protein [Hepatitis B virus]	396	5e-109
gi 62999593 gb AAY25244.1 	large S protein [Hepatitis B virus]	396	5e-109
gi 41529403 dbj BAD08506.1 	small S protein [Hepatitis B virus]	396	5e-109
gi 41529399 dbj BAD08503.1 	small S protein [Hepatitis B virus]	396	5e-109
gi 38198550 emb CAE54058.1 	S protein [Hepatitis B virus]	396	5e-109
gi 125863322 gb ABN58464.1 	small surface protein [Hepatitis B v	395	7e-109
gi 125863320 gb ABN58462.1 	large surface protein [Hepatitis B v	395	7e-109
gi 125863321 gb ABN58463.1 	middle surface protein [Hepatitis B	395	7e-109
gi 122086144 dbj BAF44869.1 	surface antigen [Hepatitis B virus]	395	7e-109
gi 90901699 gb ABE01785.1 	S protein [Hepatitis B virus]	395	7e-109

gi|90901705|gb|ABE01788.1|	S protein [Hepatitis B virus]	<u>395</u>	7e-109
gi|90901584|gb|ABE01728.1|	S protein [Hepatitis B virus]	<u>395</u>	7e-109
gi|90901728|gb|ABE01799.1|	S protein [Hepatitis B virus]	<u>395</u>	7e-109
gi|67968256|dbj|BAE00090.1|	large S protein [Hepatitis B virus]	<u>395</u>	7e-109
gi|41529383|dbj|BAD08491.1|	small S protein [Hepatitis B virus]	<u>395</u>	7e-109
gi|22335647|dbj|BAC10536.1|	middle-S protein [Hepatitis B virus]	<u>395</u>	7e-109
gi|90901610|gb|ABE01741.1|	S protein [Hepatitis B virus]	<u>395</u>	9e-109
gi|90901616|gb|ABE01744.1|	S protein [Hepatitis B virus]	<u>395</u>	9e-109
gi|90901578|gb|ABE01725.1|	S protein [Hepatitis B virus]	<u>395</u>	9e-109
gi|32330529|gb|AAP79767.1|	middle S protein [Hepatitis B virus]	<u>395</u>	9e-109
gi|32330524|gb|AAP79762.1|	large S protein [Hepatitis B virus]	<u>395</u>	9e-109

Alignments

> [gi|133919201|emb|CAL29861.1|](#) large surface antigen [Hepatitis B virus]
Length=357

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	132	.....	191
Query	61	SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	192	.....	251
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	252	.....	311
Query	181	QWFGVLSPTVWLSAIWMMWYGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	312	.....	357

> [gi|128168870|dbj|BAF48757.1|](#) envelope protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	175	.....	234
Query	61	SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	235	.....	294
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	295	.....	354
Query	181	QWFGVLSPTVWLSAIWMMWYGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	355	.....	400

> [gi|82491850|gb|ABB77805.1|](#) HBsAg [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
-------	---	--	----


```
Sbjct 1 ..... 60
Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61 .....L..... 120
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180
Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226
```

> gi|62006070|dbj|BAD91280.1| LHBs [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234
Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354
Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

> gi|38000026|gb|AAR07096.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234
Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354
Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

> gi|38000031|gb|AAR07098.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234
Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
```

Sbjct 295 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 400

> gi|32330520|gb|AAP79759.1| S protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61R..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 226

> gi|32330516|gb|AAP79755.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235R..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 400

> gi|32330521|gb|AAP79760.1| middle S protein [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 56 115

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 116R..... 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 176 235

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 236 281

> gi|14285169|gb|AAK58874.1| PreS1+PreS2+HBsAg [synthetic construct]
gi|22530872|gb|AAM96926.1| large S protein [Hepatitis B virus]
 Length=400

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	175	.....	234
Query	61	SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpqstttstgp	120
Sbjct	235	.....	294
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	295	.....	354
Query	181	QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	355	.....	400

> gi|15419851|gb|AAK97196.1|AF297623_4 large/middle/small S proteins [Hepatitis B virus]
 Length=372

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	147	.....	206
Query	61	SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpqstttstgp	120
Sbjct	207	.....	266
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	267	.....	326
Query	181	QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	327	.....	372

> gi|527444|emb|CAA84792.1| surface protein S [Hepatitis B virus]
 Length=400

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	175	.....	234
Query	61	SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpqstttstgp	120
Sbjct	235	.....	294
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	295	.....	354
Query	181	QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	355	.....	400

> gi|15419856|gb|AAK97200.1|AF297624_4 large/middle/small S proteins [Hepatitis B virus]
 Length=389

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 164 ..... 223

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 224 ..... 283

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 284 ..... 343

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 344 ..... 389

```

> gi|4884900|gb|AAD31864.1|AF134147_1 surface antigen [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  ..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 .R..... 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

> gi|18389986|gb|AAL68820.1| surface antigen [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 175 ..... 234

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400

```

> gi|22530873|gb|AAM96927.1| middle S protein [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 56 ..... 115

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 116 ..... 175

```

```
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 176 ..... 235

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 236 ..... 281
```

> gi|59802799|gb|AAX07610.1| pre-S1 protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

> gi|47499925|gb|AAT28712.1| middle S protein [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 56 ..... 115

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 116 .....T 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 176 ..... 235

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 236 ..... 281
```

> gi|47499924|gb|AAT28711.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 .....T 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

> gi|47499926|gb|AAT28713.1| S protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	1	.....	60
Query	61	SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	61	.....T	120
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	121	.....	180
Query	181	QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	181	.....	226

> gi|3248975|gb|AAC62945.1| small surface antigen [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	1	.....	60
Query	61	SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	61	.....L.....	120
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	121	.....	180
Query	181	QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	181	.....	226

> gi|5019941|gb|AAD37926.1| S protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	1	.....	60
Query	61	SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	61	.....	120
Query	121	cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	121	....M.....	180
Query	181	QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	181	.....	226

> gi|5114083|gb|AAD40215.1|AF090841_4 PreS1+PreS2+HBsAg [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	175	.....	234
Query	61	SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	235	.....	294
Query	121	ckttcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	295	.....	354
Query	181	QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	355	.....	400

> gi|2289174|gb|AAC58006.1| middle S protein [Hepatitis B virus]
gi|2289184|gb|AAC58011.1| middle S protein [Hepatitis B virus]
gi|59802800|gb|AA07611.1| pre-S2 protein [Hepatitis B virus]
gi|133919194|emb|CAL29855.1| middle surface antigen [Hepatitis B virus]
gi|133919202|emb|CAL29862.1| middle surface antigen [Hepatitis B virus]
gi|133919210|emb|CAL29869.1| middle surface antigen [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	56	.....	115
Query	61	SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	116	.....	175
Query	121	ckttcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	176	.....	235
Query	181	QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	236	.....	281

> gi|6684101|gb|AAF23483.1|AF209400_1 small surface antigen [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query	1	MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS	60
Sbjct	1	.....	60
Query	61	SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp	120
Sbjct	61	.....T.....	120
Query	121	ckttcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV	180
Sbjct	121	.....	180
Query	181	QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI	226
Sbjct	181	.....	226

> gi|71068034|gb|AAZ23006.1| large S protein [Hepatitis B virus]
Length=398

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 173 ..... 232

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 233 ..... 292

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 293 ..... 352

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 353 ..... 398

```

> gi|71068037|gb|AAZ23008.1| large S protein [Hepatitis B virus]
Length=398

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 173 ..... 232

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 233 ..... 292

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 293 ..... 352

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 353 ..... 398

```

> gi|56417960|gb|AAV90858.1| HBsAg protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  .....H..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

> gi|56417968|gb|AAV90862.1| HBsAg protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  .....A..... 120

```



```
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226
```

```
> gi|38000017|gb|AAR07092.1| large S protein [Hepatitis B virus]
gi|50953649|gb|AAT90406.1| large S protein [Hepatitis B virus]
gi|116812265|dbj|BAF36019.1| Large S protein [Hepatitis B virus]
gi|116812268|dbj|BAF36021.1| Large S protein [Hepatitis B virus]
gi|133919193|emb|CAL29854.1| large surface antigen [Hepatitis B virus]
gi|133919209|emb|CAL29868.1| large surface antigen [Hepatitis B virus]
```

Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGLPLLVLQAGFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

```
> gi|4884902|gb|AAD31865.1|AF134148.1 surface antigen [Hepatitis B virus]
gi|6979945|gb|AAF34665.1|AF222311.1 surface protein [Hepatitis B virus]
gi|14517844|gb|AAK64392.1|AF369544.1 SHBs [Hepatitis B virus]
gi|329719|gb|AAA45524.1| surface antigen [Hepatitis B virus]
gi|416075|emb|CAA53362.1| surface antigen [Hepatitis B virus]
gi|2653707|gb|AAB88102.1| small S protein [Hepatitis B virus]
gi|2653715|gb|AAB88106.1| small S protein [Hepatitis B virus]
gi|3892578|emb|CAA09959.1| major surface protein [Hepatitis B virus]
gi|14485029|gb|AAK62896.1| SHBs [Hepatitis B virus]
gi|22530874|gb|AAM96928.1| HBsAg [Hepatitis B virus]
gi|41529351|dbj|BAD08467.1| small S protein [Hepatitis B virus]
gi|41529355|dbj|BAD08470.1| small S protein [Hepatitis B virus]
gi|41529359|dbj|BAD08473.1| small S protein [Hepatitis B virus]
gi|41529363|dbj|BAD08476.1| small S protein [Hepatitis B virus]
gi|56417954|gb|AAV90855.1| HBsAg protein [Hepatitis B virus]
gi|56417962|gb|AAV90859.1| HBsAg protein [Hepatitis B virus]
gi|56417966|gb|AAV90861.1| HBsAg protein [Hepatitis B virus]
gi|56417970|gb|AAV90863.1| HBsAg protein [Hepatitis B virus]
gi|56417972|gb|AAV90864.1| HBsAg protein [Hepatitis B virus]
gi|56417974|gb|AAV90865.1| HBsAg protein [Hepatitis B virus]
gi|56417976|gb|AAV90866.1| HBsAg protein [Hepatitis B virus]
gi|56417978|gb|AAV90867.1| HBsAg protein [Hepatitis B virus]
gi|58189958|gb|AAW65560.1| HBsAg [Hepatitis B virus]
gi|58189960|gb|AAW65561.1| HBsAg [Hepatitis B virus]
gi|59802801|gb|AAX07612.1| surface antigen [Hepatitis B virus]
gi|62006065|dbj|BAD91275.1| HBsAg [Hepatitis B virus]
gi|71479935|dbj|BAE16501.1| small S protein [Hepatitis B virus]
gi|82491848|gb|ABB77804.1| HBsAg [Hepatitis B virus]
gi|82491862|gb|ABB77811.1| HBsAg [Hepatitis B virus]
gi|90901598|gb|ABE01735.1| S protein [Hepatitis B virus]
gi|90901630|gb|ABE01751.1| S protein [Hepatitis B virus]
```

```

gi|90901654|gb|ABE01763.1| S protein [Hepatitis B virus]
gi|90901662|gb|ABE01767.1| S protein [Hepatitis B virus]
gi|90901664|gb|ABE01768.1| S protein [Hepatitis B virus]
gi|90901666|gb|ABE01769.1| S protein [Hepatitis B virus]
gi|90901672|gb|ABE01772.1| S protein [Hepatitis B virus]
gi|90901677|gb|ABE01774.1| S protein [Hepatitis B virus]
gi|90901679|gb|ABE01775.1| S protein [Hepatitis B virus]
gi|90901683|gb|ABE01777.1| S protein [Hepatitis B virus]
gi|90901685|gb|ABE01778.1| S protein [Hepatitis B virus]
gi|90901689|gb|ABE01780.1| S protein [Hepatitis B virus]
gi|90901691|gb|ABE01781.1| S protein [Hepatitis B virus]
gi|90901693|gb|ABE01782.1| S protein [Hepatitis B virus]
gi|90901695|gb|ABE01783.1| S protein [Hepatitis B virus]
gi|90901701|gb|ABE01786.1| S protein [Hepatitis B virus]
gi|90901707|gb|ABE01789.1| S protein [Hepatitis B virus]
gi|90901713|gb|ABE01792.1| S protein [Hepatitis B virus]
gi|90901715|gb|ABE01793.1| S protein [Hepatitis B virus]
gi|90901717|gb|ABE01794.1| S protein [Hepatitis B virus]
gi|90901724|gb|ABE01797.1| S protein [Hepatitis B virus]
gi|90901726|gb|ABE01798.1| S protein [Hepatitis B virus]
gi|90901741|gb|ABE01805.1| S protein [Hepatitis B virus]
gi|90901748|gb|ABE01808.1| S protein [Hepatitis B virus]
gi|90901750|gb|ABE01809.1| S protein [Hepatitis B virus]
gi|90901754|gb|ABE01811.1| S protein [Hepatitis B virus]
gi|90901760|gb|ABE01814.1| S protein [Hepatitis B virus]
gi|90901762|gb|ABE01815.1| S protein [Hepatitis B virus]
gi|90901766|gb|ABE01817.1| S protein [Hepatitis B virus]
gi|90901768|gb|ABE01818.1| S protein [Hepatitis B virus]
gi|90901770|gb|ABE01819.1| S protein [Hepatitis B virus]
gi|90901772|gb|ABE01820.1| S protein [Hepatitis B virus]
gi|90901774|gb|ABE01821.1| S protein [Hepatitis B virus]
gi|90901776|gb|ABE01822.1| S protein [Hepatitis B virus]
gi|122086140|dbj|BAF44867.1| surface antigen [Hepatitis B virus]
gi|122086162|dbj|BAF44877.1| surface antigen [Hepatitis B virus]
gi|122086176|dbj|BAF44884.1| surface antigen [Hepatitis B virus]
gi|133919195|emb|CAL29856.1| small surface antigen [Hepatitis B virus]
gi|133919203|emb|CAL29863.1| small surface antigen [Hepatitis B virus]
gi|133919211|emb|CAL29870.1| small surface antigen [Hepatitis B virus]
gi|223121|prf||0509585A protein,HBs antigen major

```

Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSNLFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 1 ..... 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61 ..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

```

> gi|138789|sp|P03141|VMSA_HBVW2 Major surface antigen precursor
gi|59421|emb|CAA26539.1| unnamed protein product [Hepatitis B virus]
Length=400

```

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400

```

> gi|56417939|gb|AAV90848.1| HBsAg protein [Hepatitis B virus]
Length=226

Score = 400 bits (1029), Expect = 2e-110
Identities = 224/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  .....F.....I..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

> gi|133919218|emb|CAL29876.1| large surface antigen [Hepatitis B virus]
gi|133919224|emb|CAL29881.1| large surface antigen [Hepatitis B virus]
Length=400

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 .....M..... 400

```

> gi|133919217|emb|CAL29875.1| middle surface antigen [Hepatitis B virus]
gi|133919223|emb|CAL29880.1| middle surface antigen [Hepatitis B virus]
Length=281

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 56 ..... 115

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120

```

Sbjct 116 175

Query 121 cktcttPAQGNSMFPPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 176 235

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPPIFFCLWVYI 226

Sbjct 236M..... 281

> gi|90901732|gb|ABE01801.1| S protein [Hepatitis B virus]

Length=226

Score = 400 bits (1028), Expect = 3e-110

Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 1V..... 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61 120

Query 121 cktcttPAQGNSMFPPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPPIFFCLWVYI 226

Sbjct 181 226

> gi|90901743|gb|ABE01806.1| S protein [Hepatitis B virus]

gi|133919219|emb|CAL29877.1| small surface antigen [Hepatitis B virus]

gi|133919225|emb|CAL29882.1| small surface antigen [Hepatitis B virus]

Length=226

Score = 400 bits (1028), Expect = 3e-110

Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61 120

Query 121 cktcttPAQGNSMFPPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPPIFFCLWVYI 226

Sbjct 181M..... 226

> gi|6684109|gb|AAF23487.1|AF209404.1 small surface antigen [Hepatitis B virus]

Length=226

Score = 400 bits (1028), Expect = 3e-110

Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61 120

Query 121 cktcttPAQGNSMFPPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 181N..... 226

> gi|56417958|qb|AAV90857.1| HBsAg protein [Hepatitis B virus]
gi|90901720|qb|ABE01795.1| S protein [Hepatitis B virus]
 Length=226

Score = 400 bits (1028), Expect = 3e-110
 Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
 Sbjct 1A..... 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfillllclifllvlllDYQGMLPVCPLIpgstttstgp 120
 Sbjct 61 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
 Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 181 226

> gi|38488599|dbj|BAD02316.1| large surface protein [Hepatitis B virus]
 Length=400

Score = 400 bits (1028), Expect = 3e-110
 Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
 Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfillllclifllvlllDYQGMLPVCPLIpgstttstgp 120
 Sbjct 235 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
 Sbjct 295 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 355N..... 400

> gi|109637940|emb|CAK55123.1| middle surface protein [Hepatitis B virus subtype ADW2]
 Length=281

Score = 400 bits (1027), Expect = 4e-110
 Identities = 224/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
 Sbjct 56 115

Query 61 SPTSCPPICPGYRWMclrrfiiflfillllclifllvlllDYQGMLPVCPLIpgstttstgp 120
 Sbjct 116T..... 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
 Sbjct 176S..... 235

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 236 281